



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,717	04/28/2005	Paris Neofotistos	1079-PCT-US-02	9659

35811 7590 10/25/2005

IP GROUP OF DLA PIPER RUDNICK GRAY CARY US LLP
1650 MARKET ST
SUITE 4900
PHILADELPHIA, PA 19103

EXAMINER

SAVAGE, MATTHEW O

ART UNIT	PAPER NUMBER
----------	--------------

1724

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/509,717

Applicant(s)

NEOFOTISTOS, PARIS

Examiner

Matthew O. Savage

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10-1-01</u> . | 6) <input type="checkbox"/> Other: ____. |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-6, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Wekhof.

With respect to claim 1, Wekhof discloses a reactor vessel 11 having a fluid inlet 12 and a fluid outlet 13 and a reaction chamber 14, a plurality of UV lamps 16 extending across the reaction chamber and substantially perpendicularly to an axis extending between the fluid inlet and the fluid outlet (see FIG. 2), an upper fluid diverter and a lower fluid diverter (for example, the upper and lower diverters 18 positioned closest the inlet 12 when the lamps are disposed horizontally as described on lines 39-41 of col. 4) extending across the reaction chamber substantially parallel to the lamps and positioned downstream of one upstream lamp (e.g., the lamp adjacent inlet 12), the upper and lower fluid diverters being positioned to direct fluid toward the downstream lamp (e.g., the second lamp from the inlet 12).

As to claim 2, Wekhof discloses the upper and lower fluid diverters 18 as being positioned at an angle of about 45 degrees from horizontal (see lines 26-28 of col. 5).

As to claim 4, Wekhof discloses an L-shaped center fluid diverter 17 (e.g., L-shaped in cross-section) positioned substantially halfway between the upper and lower fluid diverters (see FIG. 2).

Regarding claim 5, Wekhof discloses the center fluid diverter 17 as having legs at an angle of about 45 degrees from the horizontal.

Concerning claim 6, Wekhof discloses the reaction chamber as including four UV lamps.

Concerning claim 10, Wekhof discloses the upper and lower diverters as being positioned at an angle of about 45 degrees which is less than 90 degrees.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wekhof in view of Norimitsu et al.

Wekhof fails to specify a lower fluid diverter as being positioned substantially vertically below the upper fluid diverter. Norimitsu et al discloses an analogous vessel 11 (see FIG. 1) with diverters 13 arranged such that one could be positioned vertically below the other in the case that the major axis flow of the vessel was oriented horizontally and suggests that such an arrangement exhibits full performance of the UV treatment and gives a stable sterilizing effect (see the abstract). It would have been obvious to have modified the apparatus of Wekhof so as to have included the diverter arrangement as suggested by Norimitsu et al in order to enable full performance of the UV treatment and to give a stable sterilizing effect.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wekhof in view of Bergmann et al.

Wekhof fails to specify a UV sensor for each lamp. Bergman et al disclose the concept of providing a UV sensor 19 for each lamp (e.g., the one sensor 19 sensing radiation from each lamp, see FIG. 1) teaches that the sensor can measure the intensity of UV radiation within the reaction chamber (see lines 42-44 of col. 3). It would have been obvious to have modified the apparatus of Wekhof so as to have included the sensor as suggested by Bergmann et al in order to provide a means for measuring the intensity of UV radiation within the chamber.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wekhof in view of Veloz.

With respect to claim 8, Wekhof fails to specify the chamber as containing six UV lamps. Veloz discloses an analogous apparatus including six UV lamps in a single reaction chamber (e.g., six of fifteen lamps, see FIG. 1) and suggests that such an apparatus can sterilize fluid supplied at relatively high flow rates. It would have been obvious to have modified the apparatus of Wekhof so as to have included six lamps as suggested by Veloz in order to enable the sterilization of fluid supplied at relatively high flow rates.

With respect to claim 9, Wekhof discloses upper and lower diverters 18 and Veloz suggests upper and lower diverters 45 as well as upper and lower UV lamps 34.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wekhof in view of Weedkamp.

With respect to claim 11, Wekhof discloses a reactor vessel 11 having a fluid inlet 12 and a fluid outlet 13 and a reaction chamber 14, a plurality of UV lamps 16 extending across horizontally across the reaction chamber perpendicularly to an axis extending between the fluid inlet and outlet the reaction chamber and substantially perpendicularly to an axis extending between the fluid inlet and the fluid outlet (see FIG. 2 and lines 39-41 of col. 4), an upper fluid diverter and a lower fluid diverter (for example, the upper and lower diverters 18 positioned closest the inlet 12 when the lamps are disposed horizontally as described on lines 39-41 of col. 4) extending horizontally across the reaction chamber substantially parallel to the lamps and positioned downstream of one upstream lamp (e.g., the lamp adjacent inlet 12), the upper and lower fluid diverters being positioned to direct fluid toward the downstream lamp (e.g., the second lamp from the inlet 12). Wekhof fails to specify the reactor as being circularly shaped. Weedkamp discloses an analogous apparatus including a circularly shaped reactor vessel 20 (see FIGS. 1-3) and suggests that such a design facilitates enables the housing 20 and associated inlet and outlet pipelines 34 to have the same cross-section thereby permitting UV radiation to extend beyond the housing and into the pipelines to more fully treat the fluid. It would have been obvious to have modified the apparatus of Wekhof so as to have included a housing having a circular cross section as suggested by Weedkamp in order to permit the housing and inlet and

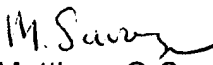
Art Unit: 1724

outlet pipelines to have the same cross section thereby permitting UV radiation to extend beyond the housing and into the pipelines to more fully treat the fluid.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matthew O Savage
Primary Examiner
Art Unit 1724

mos
October 21, 2005